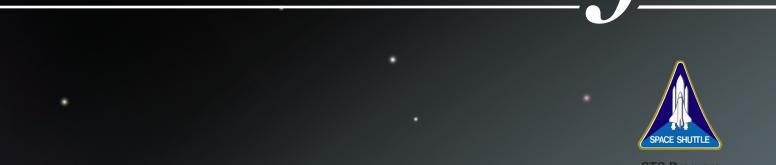




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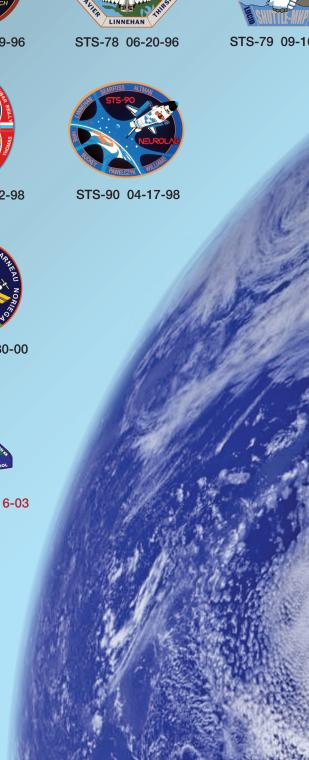












Mission: Shuttle Systems Test Flight **Space Shuttle:** Columbia Launched: April 12, 1981, at 7:00:03 a.m. EST Landed: April 14, 1981, at 10:20:57 a.m. PST Landing Site: Edwards Air Force Base, CA Mission Duration: 2 days, 6 hours, 20 minutes Crew: Commander John W. Young and Pilot Robert L. Crippen

Mission: Office of Space and Terrestrial Applications-1 (OSTA-1) **Space Shuttle:** Columbia Launched: November 12, 1981, at 10:09:59 a.m. EST **Landed:** November 14, 1981, at 1:23:11 p.m. PST Landing Site: Edwards Air Force Base, CA Mission Duration: 2 days, 6 hours, 13 minutes **Crew:** Commander Joe H. Engle and Pilot Richard H. Truly. Backup crewmembers: Thomas K. Mattingly II and Henry W. Hartsfield, Jr.

Mission: Office of Space Science-1 (OSS-1) **Space Shuttle:** Columbia Launched: March 22, 1982, at 11:00:00 a.m. EST **Landed:** March 30, 1982, at 9:04:46 a.m. MST Landing Site: White Sands, NM **Mission Duration:** 8 days, 0 hours, 4 minutes Crew: Commander Jack R. Lousma, Pilot C. Gordon Fullerton. Backup crewmembers: Thomas K. Mattingly II and Henry W. Hartsfield, Jr.

Mission: Department of Defense, Continuous Flow Electrophoresis System (CFES) Space Shuttle: Columbia **Launched:** June 27, 1982, at 11:00:00 a.m. EDT **Landed:** July 4, 1982, at 9:09:31 a.m. PDT Landing Site: Edwards Air Force Base, CA **Mission Duration:** 7 days, 1 hour, 9 minutes Crew: Commander Thomas K. Mattingly II and Pilot Henry W. Hartsfield, Jr.

Mission: Commercial Communications Satellites (ANIK C-3), Satellite Business Systems (SBS-C) **Space Shuttle:** Columbia **Launched:** November 11, 1982, at 7:19:00 a.m. EST **Landed:** November 16, 1982, at 6:33:26 a.m. PST Landing Site: Edwards Air Force Base, CA **Mission Duration:** 5 days, 2 hours, 14 minutes **Crew:** Commander Vance D. Brand, Pilot Robert F. Overmyer, and Mission Specialists Joseph P. Allen and William B. Lenoir

Mission: Tracking and Data Relay Satellite-1 (TDRS-1), First Shuttle Spacewalk **Space Shuttle:** Challenger Launched: April 4, 1983, at 1:30:00 p.m. EST **Landed:** April 9, 1983, at 10:53:42 a.m. PST Landing Site: Edwards Air Force Base, CA Mission Duration: 5 days, 0 hours, 23 minutes Crew: Commander Paul J. Weitz. Pilot Karol J. Bobko. and Mission Specialists Donald H. Peterson and F. Story Musgrave

Mission: Communications Satellite Launch, First U.S. Woman in Space Space Shuttle: Challenger **Launched:** June 18, 1983, at 7:33:00 a.m. EDT **Landed:** June 24, 1983, at 6:56:59 a.m. PDT Landing Site: Edwards Air Force Base, CA sion Duration: 6 days, 2 hours, 24 minutes **Crew:** Commander Robert L. Crippen; Pilot Frederick H. Hauck; and Mission Specialists John M. Fabian, Sally K. Ride, and Norman E. Thagard

Mission: Multipurpose Satellite, First Night Launch and Landing Space Shuttle: Challenger **Launched:** August 30, 1983, at 2:32:00 a.m. EDT **Landed:** September 5, 1983, at 12:40:43 a.m. PDT Landing Site: Edwards Air Force Base, CA **Mission Duration:** 6 days, 1 hour, 8 minutes **Crew:** Commander Richard H. Truly; Pilot Daniel C. Brandenstein; and Mission Specialists Dale A. Gardner, Guion S. Bluford, Jr., and William E. Thornton

Mission: Orbital Laboratory and Observations Platform, First Spacelab Mission, First Rollback, First 6-Crewmember Flight Space Shuttle: Columbia **Launched:** November 28, 1983, at 11:00:00 a.m. EST **Landed:** December 8, 1983, at 3:47:24 a.m. PST Landing Site: Edwards Air Force Base, CA **Mission Duration:** 10 days, 7 hours, 47 minutes **Crew:** Commander John W. Young; Pilot Brewster H. Shaw, Jr.; Mission Specialists Owen K. Garriott and Robert A. R. Parker; and Payload Specialists Byron K. Lichtenberg and Ulf Merbold

STS-41B Mission: WESTAR-VI, Manned Maneuvering Unit, PALAPA-B2, First KSC Landing **Space Shuttle:** Challenger **Launched:** February 3, 1984, at 8:00:00 a.m. EST Landed: February 11, 1984, at 7:15:55 a.m. EST Landing Site: Kennedy Space Center, FL **Mission Duration:** 7 days, 23 hours, 15 minutes Crew: Commander Vance D. Brand; Pilot Robert L. Gibson; and Mission Specialists Bruce McCandless II, Ronald E. McNair, and Robert L. Stewart

STS-41C **Mission:** Long Duration Exposure Facility Deployment, First On-Orbit Spacecraft Repair Space Shuttle: Challenger Launched: April 6, 1984, at 8:58:00 a.m. EST **Landed:** April 13, 1984, at 5:38:07 a.m. PST Landing Site: Edwards Air Force Base, CA **Mission Duration:** 6 days, 23 hours, 40 minutes **Crew:** Commander Robert L. Crippen; Pilot Francis R. Scobee; and Mission Specialists George D. Nelson,

James D. A. Van Hoften, and Terry J. Hart Mission: SBS-D, Satellite Business System SYNCOM IV-2, Solar Wing TELSTAR **Space Shuttle:** Discovery **Launched:** August 30, 1984, at 8:41:50 a.m. EDT **Landed:** September 5, 1984, at 6:37:54 a.m. PDT Landing Site: Edwards Air Force Base, CA **Mission Duration:** 6 days, 0 hours, 56 minutes Crew: Commander Henry W. Hartsfield, Jr.; Pilot Michael L. Coats; Mission Specialists Judith A.

Resnick, Steven A. Hawley, and Richard M. Mullane; and Payload Specialist Charles D. Walker STS-41G **Mission:** Earth Radiation Budget Satellite, Office of Space and Terrestrial Applications-3 Space Shuttle: Challenger **Launched:** October 5, 1984, at 7:03:00 a.m. EDT **Landed:** October 13, 1984, at 12:26:38 p.m. EDT Landing Site: Kennedy Space Center, FL Mission Duration: 8 days, 5 hours, 23 minutes **Crew:** Commander Robert L. Crippen; Pilot Jon A.

McBride; Mission Specialists Kathryn D. Sullivan, Sally

K. Ride, and David C. Leestma; and Payload Specialists

Marc Garneau and Paul D. Scully-Power

Mission: TELESAT-H. Canadian Communications Satellite, SYNCOM IV-1 Defense Communications Satellite Space Shuttle: Discovery **Launched:** November 8, 1984, at 7:15:00 a.m. EST **Landed:** November 16, 1984, at 6:59:56 a.m. EST Landing Site: Kennedy Space Center, FL **Mission Duration:** 7 days, 23 hours, 44 minutes **Crew:** Commander Frederick H. Hauck; Pilot David M. Walker; and Mission Specialists Anna L. Fisher, Dale A.

Gardner, and Joseph P. Allen **Mission:** Department of Defense Space Shuttle: Discovery Launched: January 24, 1985, at 2:50:00 p.m. EST **Landed:** January 27, 1985, at 4:23:23 p.m. EST Landing Site: Kennedy Space Center, FL Mission Duration: 3 days, 1 hour, 33 minutes **Crew:** Commander Thomas K. Mattingly II, Pilot Loren J. Shriver, Mission Specialists Ellison S. Onizuka and James F. Buchli, and Payload Specialist Gary E. Payton

Mission: TELSAT-I, Communications Satellite SYNCOM IV-3 Space Shuttle: Discovery Launched: April 12, 1985, at 8:59:05 a.m. EST Landed: April 19, 1985, at 8:54:28 a.m. EST Landing Site: Kennedy Space Center, FL Mission Duration: 6 days, 23 hours, 55 minutes Crew: Commander Karol J. Bobko: Pilot Donald E Williams; Mission Specialists M. Rhea Seddon, Jeffrey A. Hoffman, and S. David Griggs; and Payload Specialists Charles D. Walker and Senator E. Jake Garn

STS-51B Mission: Spacelab-3 Space Shuttle: Challenger **Launched:** April 29, 1985, at 12:02:18 p.m. EDT **Landed:** May 6, 1985, at 9:11:04 a.m. PDT Landing Site: Edwards Air Force Base, CA Mission Duration: 7 days, 0 hours, 8 minutes **Crew:** Commander Robert F. Overmyer; Pilot Frederick D. Gregory: Mission Specialists Don L. Lind, Norman E. Thagard, and William E. Thornton; and Payload Specialists Lodewijk van den Berg and Taylor G. Wang

STS-51G Mission: MORELOS-A, ARABSAT-A, and TELSTAR-3D **Communications Satellites** Space Shuttle: Discovery Launched: June 17, 1985, at 7:33:00 a.m. EDT **Landed:** June 24, 1985, at 6:11:52 a.m. PDT Landing Site: Edwards Air Force Base, CA Mission Duration: 7 days, 1 hour, 38 minutes **Crew:** Commander Daniel C. Brandenstein; Pilot John O. Creighton; Mission Specialists Shannon W. Lucid, John M. Fabian, and Steven R. Nagel; and Payload Specialists Patrick Baudry and Sultan Salman Al-Saud

STS-51F Mission: Spacelab-2 Space Shuttle: Challenger **Launched:** July 29, 1985, at 5:00:00 p.m. EDT **Landed:** August 6, 1985, at 12:45:26 p.m. PDT Landing Site: Edwards Air Force Base, CA **Mission Duration:** 7 days, 22 hours, 45 minutes **Crew:** Commander Gordon Fullerton; Pilot Roy D. Bridges, Jr.: Mission Specialists F. Story Musgrave. Anthony W. England, and Karl G. Henize; and Payload

Specialists Loren W. Acton and John-David F. Bartoe **Mission:** ASC-1/American Satellite Company, SYNCOM IV-4 Space Shuttle: Discovery Launched: August 27 1985 at 6:58:01 a m EDT **Landed:** September 3, 1985, at 6:15:43 a.m. PDT Landing Site: Edwards Air Force Base, CA **Mission Duration:** 7 days, 2 hours, 17 minutes

John M. Lounge, and William F. Fisher STS-51J Mission: Department of Defense Space Shuttle: Atlantis **Launched:** October 3, 1985, at 11:15:30 a.m. EDT **Landed:** October 7, 1985, at 10:00:08 a.m. PDT Landing Site: Edwards Air Force Base, CA Mission Duration: 4 days, 1 hour, 44 minutes Crew: Commander Karol J. Bobko; Pilot Ronald J

Crew: Commander Joe H. Engle; Pilot Richard O.

Covey; and Mission Specialists James D.A. van Hoften,

Landed: April 29, 1990, at 6:49:57 a.m. PDT Grabe; and Mission Specialists David C. Hilmers, Landing Site: Edwards Air Force Base, CA Robert L. Stewart, and William A. Pailes STS-61A Mission: D-1 Spacelab Mission (First German Dedicated Spacelab) Space Shuttle: Challenger

Bruce McCandless II, and Kathryn D. Sullivan Launched: October 30, 1985, at 12:00:00 p.m. EST Mission: Ulysses, SSBUV, ISAC **Landed:** November 6, 1985, 9:44:53 a.m. PST Space Shuttle: Discovery Launched: October 6, 1990, at 7:47:15 a.m. EDT **Landing Site:** Edwards Air Force Base, CA **Mission Duration:** 7 days, 0 hours, 44 minutes **Landed:** October 10, 1990, at 6:57:19 a.m. PDT **Crew:** Commander Henry W. Hartsfield, Jr.; Pilot Landing Site: Edwards Air Force Base, CA Steven R. Nagel; Mission Specialists James F. Buchli, Mission Duration: 4 days, 2 hours, 10 minutes Guion S. Bluford, and Bonnie J. Dunbar; and Payload Crew: Commander Richard N. Richards; Pilot Robert Specialists Reinhard Furrer, Ernst Messerschmid, and D. Cabana; and Mission Specialists William M. Wubbo J. Ockels Shepherd, Bruce E. Melnick, and Thomas D. Akers

STS-61B Mission: MORELOS-B, AUSSAT-2, SATCOM KU-2 Space Shuttle: Atlantis **Launched:** November 26, 1985, at 7:29:00 p.m. EST **Landed:** December 3, 1985, at 1:33:49 p.m. PST **Landed:** November 20, 1990, at 4:42:46 p.m. EST Landing Site: Edwards Air Force Base, CA **Mission Duration:** 6 days, 21 hours, 4 minutes **Crew:** Commander Brewster H. Shaw, Jr.; Pilot Bryan D. O'Connor; Mission Specialists Mary L. Cleave, Sherwood C. Spring, and Jerry L. Ross; and Payload Springer, Carl J. Meade, and Charles D. Gemar Specialists Rodolfo Neri Vela and Charles D. Walker

STS-61C Mission: ASTRO-1 Mission: SATCOM KU-1 Space Shuttle: Columbia Space Shuttle: Columbia **Launched:** December 2, 1990, at 1:49:01 a.m. EST Launched: January 12, 1986, at 6:55:00 a.m. EST **Landed:** December 10, 1990, at 9:54:09 p.m. PST **Landed:** January 18, 1986, at 5:58:51 a.m. PST Landing Site: Edwards Air Force Base, CA **Landing Site:** Edwards Air Force Base, CA Mission Duration: 8 days, 23 hours, 5 minutes **Mission Duration:** 6 days, 2 hours, 3 minutes Crew: Commander Vance D. Brand; Pilot Guy S. Crew: Commander Robert L. Gibson; Pilot Charles F. Gardner; Mission Specialists Jeffrey A. Hoffman, John Bolden, Jr.; Mission Specialists Franklin R. Chang-Diaz, M. Lounge, and Robert A. Parker; and Payload Steven A. Hawley, and George D. Nelson; and Payload Specialists Samuel T. Durrance and Ronald A. Parise Specialists Robert J. Cenker and Congressman

Mission: Gamma Ray Observatory STS-51L Space Shuttle: Atlantis Mission: TDRS-2, SPARTAN-203 Satellites Launched: April 5, 1991, at 9:22:44 a.m. EST **Landed:** April 11, 1991, at 6:55:29 a.m. EST Space Shuttle: Challenger Launched: January 28, 1986, at 11:38:00 a.m. EST Landing Site: Edwards Air Force Base, CA Mission Duration: 1 minute, 13 seconds **Mission Duration:** 5 days, 23 hours, 32 minutes Crew: Commander Francis R. Scobee; Pilot Michael J. **Crew:** Commander Steven R. Nagel; Pilot Kenneth D. Smith; Mission Specialists Judith A. Resnik, Ellison S. Cameron; and Mission Specialists Jerry L. Ross, Jay Onizuka, and Ronald E. McNair; and Payload Specialists Apt, and Linda M. Godwin

Gregory B. Jarvis and Sharon Christa McAuliffe Mission: Department of Defense, AFP-675; IBSS; STS-26 Mission: TDRS-C Space Shuttle: Discovery Space Shuttle: Discovery **Launched:** September 29, 1988, at 11:37:00 a.m. EDT **Launched:** April 28, 1991, at 7:33:14 a.m. EDT **Landed:** October 3, 1988, at 9:37:11 a.m. PDT **Landed:** May 6, 1991, at 2:55:37 p.m. EDT Landing Site: Edwards Air Force Base, CA Landing Site: Kennedy Space Center, FL Mission Duration: 4 days, 1 hour, 0 minutes Mission Duration: 8 days, 7 hours, 22 minutes Crew: Commander Frederick H. Hauck: Pilot Richard Crew: Commander Michael L. Coats; Pilot L. Blaine O. Covey; and Mission Specialists John M. Lounge, Hammond; and Mission Specialists Guion S. Bluford, George D. Nelson, and David C. Hilmers Jr., Gregory J. Harbaugh, Richard J. Hieb, Donald R.

Mission: Department of Defense Space Shuttle: Atlantis **Launched:** December 2, 1988, at 9:30:34 a.m. EST Landed: December 6, 1988, at 3:36:11 p.m. PST Landing Site: Edwards Air Force Base, CA **Mission Duration:** 4 days, 9 hours, 5 minutes Crew: Commander Robert L. Gibson; Pilot Guy S. Gardner; and Mission Specialists Richard Mullane Jerry L. Ross, and William M. Shepherd

Mission: Department of Defense

Mission: Galileo, Shuttle Solar Backscatter

Launched: October 18, 1989, at 12:53:40 p.m. EDT

Landed: October 23, 1989, at 9:33:01 a.m. PDT

Mission Duration: 4 days, 23 hours, 39 minutes

Chang-Diaz, Shannon W. Lucid, and Ellen S. Baker

Launched: November 22, 1989, at 7:23:30 p.m. EST

Crew: Commander Frederick D. Gregory; Pilot John E.

Blaha; and Mission Specialists F. Story Musgrave,

Launched: January 9, 1990, at 7:35:00 a.m. EST

Landed: January 20, 1990, at 1:35:36 a.m. PST

Mission Duration: 10 days, 21 hours, 0 minutes

Crew: Commander Daniel C. Brandenstein; Pilot

Launched: February 28, 1990, at 2:50:22 a.m. EST

Mission Duration: 4 days, 10 hours, 18 minutes

Crew: Commander John O. Creighton; Pilot John H.

Casper; and Mission Specialists Richard M. Mullane,

Landed: March 4, 1990, at 10:08:44 a.m. PST

Mission: Hubble Space Telescope Deployment

Launched: April 24, 1990, at 8:33:51 a.m. EDT

Mission Duration: 5 days, 1 hour, 16 minutes

Crew: Commander Loren J. Shriver; Pilot Charles F.

Bolden, Jr.; and Mission Specialists Steven A. Hawley,

Landing Site: Edwards Air Force Base, CA

David C. Hilmers, and Pierre J. Thuot

Space Shuttle: Discovery

Mission: Department of Defense

Launched: November 15, 1990, at 6:48:15 p.m. EST

Mission Duration: 4 days, 21 hours, 54 minutes

Crew: Commander Richard O. Covey; Pilot Frank L

Culbertson, Jr.; and Mission Specialists Robert C.

Landing Site: Kennedy Space Center, FL

McMonagle, and Charles L. Veach

Space Shuttle: Atlantis

J. Dunbar, G. David Low, and Marsha S. Ivins

Mission: Department of Defense

Space Shuttle: Atlantis

Landing Site: Edwards Air Force Base, CA

Landed: November 27, 1989, at 4:30:18 p.m. PST

Landing Site: Edwards Air Force Base, CA

Mission Duration: 5 days, 0 hours, 6 minutes

Manley L. Carter, Jr., and Kathryn C. Thornton

Mission: SYNCOM IV-F5, LDEF Retrieval

McCulley; and Mission Specialists Franklin R.

Mission: Department of Defense

Space Shuttle: Discovery

Space Shuttle: Columbia

Crew: Commander Donald E. Williams; Pilot Michael J.

Landing Site: Edwards Air Force Base, CA

Space Shuttle: Columbia

Ultraviolet Experiment

Space Shuttle: Atlantis

Mission: Tracking and Data Relay Satellite-4 (TDRS-4) Mission: TDRS-E, SSBUV-03, SHARE-II Space Shuttle: Discovery Launched: March 13, 1989, at 9:57:00 a.m. EST Space Shuttle: Atlantis **Landed:** March 18, 1989, at 6:35:50 a.m. PST **Launched:** August 2, 1991, at 11:01:59 a.m. EDT Landing Site: Edwards Air Force Base, CA **Landed:** August 11, 1991, at 8:23:25 a.m. EDT Mission Duration: 4 days, 23 hours, 38 minutes Landing Site: Kennedy Space Center, FL Crew: Commander Michael L. Coats; Pilot John E. **Mission Duration:** 8 days, 21 hours, 21 minutes Blaha; and Mission Specialists James P. Bagian, Crew: Commander John E. Blaha; Pilot Michael E James F. Buchli, and Robert C. Springer Baker; and Mission Specialists Shannon W. Lucid, James C. Adamson, and G. David Low

Mission: Magellan Space Shuttle: Atlantis Mission: UARS **Launched:** May 4, 1989, at 2:46:59 p.m. EDT **Space Shuttle:** Discovery Launched: September 12, 1991, at 7:11:04 p.m. EDT **Landed:** May 8, 1989, at 12:43:26 p.m. PDT Landing Site: Edwards Air Force Base, CA **Landed:** September 18, 1991, at 12:38:42 a.m. PDT Mission Duration: 4 days, 0 hours, 56 minutes **Landing Site:** Edwards Air Force Base, CA Mission Duration: 5 days, 8 hours, 27 minutes Crew: Commander David M. Walker; Pilot Ronald J. Grabe; and Mission Specialists Norman E. Thagard, **Crew:** Commander John O. Creighton; Pilot Kenneth S. Mary L. Cleave, and Mark C. Lee Reightler, Jr.; and Mission Specialists Mark N. Brown, Charles D. Gemar, and James F. Buchli

Mission: Department of Defense, DSP Launched: August 8, 1989, at 8:37:00 a.m. EDT Space Shuttle: Atlantis Landed: August 13, 1989, at 6:37:08 a.m. PDT **Launched:** November 24, 1991, at 6:44:00 p.m. EST **Landed:** December 1, 1991, at 2:34:44 p.m. PST **Landing Site:** Edwards Air Force Base, CA Mission Duration: 5 days, 1 hour, 0 minutes Landing Site: Edwards Air Force Base, CA Crew: Commander Brewster H. Shaw, Jr.; Pilot Mission Duration: 6 days, 22 hours, 50 minutes Richard N. Richards; and Mission Specialists James C. **Crew:** Commander Frederick D. Gregory; Pilot Terence T. Adamson, David C. Leestma, and Mark N. Brown Henricks; and Mission Specialists Mario Runco, Jr., James S. Voss, F. Story Musgrave, and Thomas J. Hennen

Mission: Spacelab Life Sciences-1

Launched: June 5, 1991, at 9:24:51 a.m. EDT

Landed: June 14, 1991, at 8:39:11 a.m. PDT

Mission Duration: 9 days, 2 hours, 14 minutes

Gutierrez; and Mission Specialists James P. Bagian,

Crew: Commander Bryan D. O'Connor; Pilot Sidney M.

Tamara E. Jernigan, M. Rhea Seddon, F. Drew Gaffney.

Landing Site: Edwards Air Force Base, CA

Space Shuttle: Columbia

and Millie Hughes-Fulford

STS-42 Mission: IMI -1 Space Shuttle: Discovery **Launched:** January 22, 1992, at 9:52:33 a.m. EST **Landed:** January 30, 1992, at 8:07:17 a.m. PST Landing Site: Edwards Air Force Base, CA Mission Duration: 8 days, 1 hour, 14 minutes **Crew:** Commander Ronald J. Grabe; Pilot Stephen S. Oswald; Mission Specialists Norman E. Thagard, David C. Hilmers, and William F. Readdy; and Payload Specialists Roberta L. Bondar and Ulf D. Merbold

STS-45 Mission: ATL AS-1 Space Shuttle: Atlantis **Launched:** March 24, 1992, at 8:13 a.m. EST **Landed:** April 2, 1992, at 6:23 a.m. EST Landing Site: Kennedy Space Center, FL Mission Duration: 8 days, 22 hours, 9 minutes, **Crew:** Commander Charles F. Bolden, Jr.: Pilot Brian Duffy; Mission Specialists Kathryn D. Sullivan, David C. Leestma, and C. Michael Foale; and Payload Specialists Byron K. Lichtenberg and Dirk D. Frimout

Mission: Intelsat VI Repair Space Shuttle: Endeavour Launched: May 7, 1992, at 7:40 p.m. EDT **Landed:** May 16, 1992, at 1:57:38 p.m. PD Landing Site: Edwards Air Force Base, CA **Crew:** Commander Daniel C. Brandenstein: Pilot Kevin P. Chilton; and Mission Specialists Pierre J. Thuot, Kathryn C. Thornton, Richard J. Hieb, Thomas D. Akers, and Bruce E. Melnick

STS-50 Mission: USML-1 Space Shuttle: Columbia **Launched:** June 25, 1992, at 12:12:23 p.m. EDT **Landed:** July 9, 1992, at 7:42:27 a.m. EDT Landing Site: Kennedy Space Center, FL Mission Duration: 13 days, 19 hours, 30 minutes Crew: Commander Richard N. Richards: Pilot Kenneth D. Bowersox; Mission Specialists Bonnie J. Dunbar, Ellen S. Baker, and Carl J. Meade; and Payload Specialists Lawrence J. DeLucas and Eugene H. Trinh

Mission: TSS-1, EURECA Deployment Space Shuttle: Atlantis Launched: July 31, 1992, at 9:56:48 a.m. EDT **Landed:** August 8, 1992, at 9:11:51 a.m. EDT **Landing Site:** Kennedy Space Center, FL Mission Duration: 7 days, 23 hours, 15 minutes **Crew:** Commander Loren J. Shriver; Pilot Andrew M. Allen; Mission Specialists Jeffrey A. Hoffman, Franklin R. Chang-Diaz, Claude Nicollier, and Marsha S. Ivins; and Payload Specialist Franco Malerba

Mission: Spacelab-J Space Shuttle: Endeavour **Launched:** September 12, 1992, at 10:23:00 a.m. EDT **Landed:** September 20, 1992, at 8:53:23 a.m. EDT Landing Site: Kennedy Space Center, FL **Mission Duration:** 7 days, 22 hours, 30 minutes Crew: Commander Robert L. Gibson; Pilot Curtis L. Brown, Jr.; Mission Specialists Mark C. Lee, N. Jan Davis, Jay Apt, and Mae C. Jemison; and Payload Specialist Mamoru Mohri

Mission: USMP-1, LAGEOS II Space Shuttle: Columbia **Launched:** October 22, 1992, at 1:09:39 p.m. EDT **Landed:** November 1, 1992, at 9:05:52 a.m. EST Landing Site: Kennedy Space Center, FL **Mission Duration:** 9 days, 20 hours, 56 minutes **Crew:** Commander James D. Wetherbee; Pilot Michael A. Baker; Mission Specialists Charles L. Veach, William M. Shepherd, and Tamara E. Jernigan; and Payload Specialist Steven A. MacLean

STS-53 Mission: Department of Defense, ODERACS Space Shuttle: Discovery Launched: December 2, 1992, at 8:24 a.m. EST **Landed:** December 9, 1992, at 12:43:47 p.m. PST Landing Site: Edwards Air Force Base, CA Mission Duration: 7 days, 7 hours, 19 minutes Crew: Commander David M. Walker: Pilot Robert D Cabana; and Mission Specialists Guion S. Bluford, Jr., James S. Voss, and Michael R. Clifford

Mission: TDRS-F. DXS Space Shuttle: Endeavour **Launched:** January 13, 1993, at 8:59:30 a.m. EST **Landed:** January 19, 1993, at 8:37:49 a.m. EST Landing Site: Kennedy Space Center, FL Mission Duration: 5 days, 23 hours, 38 minutes **Crew:** Commander John H. Casper; Pilot Donald R. McMonagle; and Mission Specialists Mario Runco, Jr. Gregory J. Harbaugh, and Susan J. Helms

Mission: ATLAS-2, SPARTAN-201 Space Shuttle: Discovery Launched: April 8, 1993, at 1:29:00 a.m. EDT **Landed:** April 17, 1993, at 7:37:24 a.m. EDT Landing Site: Kennedy Space Center, FL **Mission Duration:** 9 days, 6 hours, 8 minutes **Crew:** Commander Kenneth D. Cameron; Pilot Stephen S. Oswald; and Mission Specialists C. Michael Foale, Kenneth D. Cockrell, and Ellen Ochoa

Mission: D-2 Spacelab Mission Space Shuttle: Columbia Launched: April 26, 1993, at 10:50 a.m. EDT **Landed:** May 6, 1993, at 7:29:59 a.m. PDT Landing Site: Edwards Air Force Base, CA Mission Duration: 9 days, 23 hours, 39 minutes **Crew:** Commander Steven R. Nagel; Pilot Terence T. Henricks; Mission Specialists Jerry L. Ross, Charles J. Precourt, and Bernard A. Harris, Jr.; and Payload Specialists Ulrich Walter and Hans Schlegel

Mission: SPACEHAB-1, EURECA Retrieval Space Shuttle: Endeavour Launched: June 21, 1993, at 9:07 a.m. EDT Landed: July 1, 1993, at 8:52 a.m. EDT Landing Site: Kennedy Space Center, FL Mission Duration: 9 days, 23 hours, 44 minutes **Crew:** Commander Ronald J. Grabe; Pilot Brian Duffy; Payload Commander G. David Low; and Mission Specialists Nancy J. Sherlock, Peter J. Wisoff, and Janice E. Voss

Mission: ACTS/TOS, ORFEUS-SPAS Space Shuttle: Discovery Launched: September 12, 1993, at 7:45 a.m. EDT **Landed:** September 22, 1993, at 3:56 a.m. EDT Landing Site: Kennedy Space Center, FL Mission Duration: 9 days, 20 hours, 11 minutes **Crew:** Commander Frank L. Culbertson, Jr.; Pilot William F. Readdy; and Mission Specialists James H Newman, Daniel W. Bursch, and Carl E. Walz

STS-58 Mission: SLS-2 Space Shuttle: Columbia **Launched:** October 18, 1993, at 10:53 a.m. EDT Landed: November 1, 1993, at 7:05:42 a.m. PST Landing Site: Edwards Air Force Base, CA Mission Duration: 14 days, 0 hours, 12 minutes Crew: Commander John E. Blaha; Pilot Richard A Searfoss; Mission Specialists M. Rhea Seddon, William S. McArthur, Jr., David A. Wolf, and Shannon W. Lucid; and Payload Specialist Martin Fettman

STS-61 Mission: First Hubble Space Telescope Servicing Mission Space Shuttle: Endeavour **Launched:** December 2, 1993, at 4:27:00 a.m. EST **Landed:** December 13, 1993, at 12:25:37 a.m. EST Landing Site: Kennedy Space Center, FL Mission Duration: 10 days, 19 hours, 58 minutes **Crew:** Commander Richard O. Covey; Pilot Kenneth D. Bowersox; Payload Commander F. Story Musgrave; and Mission Specialists Kathryn C. Thornton, Claude Nicollier, Jeffrey A. Hoffman, and Tom Akers

Mission: WSF-1. SPACEHAB-2 Space Shuttle: Discovery **Launched:** February 3, 1994, at 7:10:00 a.m. EST **Landed:** February 11, 1994, at 2:19:22 p.m. EST Landing Site: Kennedy Space Center, FL Mission Duration: 8 days, 7 hours, 9 minutes Crew: Commander Charles F. Bolden, Jr.: Pilot Kenneth F. Reightler, Jr.; and Mission Specialists N. Jan Davis, Ronald M. Sega, Franklin R. Chang-Diaz, and Sergei K. Krikalev

STS-62 Mission: USMP-2, 0AST-2 Space Shuttle: Columbia **Launched:** March 4, 1994, at 8:53:00 a.m. EST Landed: March 18, 1994, at 8:09:41 a.m. EST Landing Site: Kennedy Space Center, FL Mission Duration: 13 days, 23 hours, 16 minutes Crew: Commander John H. Casper; Pilot Andrew M. Allen; and Mission Specialists Pierre J. Thuot, Charles D. Gemar, and Marsha S. Ivins

STS-59 Mission: Space Radar Laboratory (SRL-1) Space Shuttle: Endeavour **Launched:** April 9, 1994, at 7:05 a.m. EDT Landed: April 20, 1994, at 9:54:30 a.m. PDT Landing Site: Edwards Air Force Base, CA Mission Duration: 11 days, 5 hours, 49 minutes **Crew:** Commander Sidney M. Gutierrez; Pilot Kevin P. Chilton; Payload Commander Linda M. Godwin; and Mission Specialists Jay Apt, Michael R. Clifford, and Thomas D. Jones

STS-65 **Mission:** International Microgravity Library (IML-2) Space Shuttle: Columbia **Launched:** July 8, 1994, at 12:43:00 p.m. EDT **Landed:** July 23, 1994, at 6:38:00 a.m. EDT **Landing Site:** Kennedy Space Center, FL Mission Duration: 14 days, 17 hours, 55 minutes **Crew:** Commander Robert D. Cabana; Pilot James D. Halsell, Jr.; Payload Commander Richard J. Hieb; Mission Specialists Carl E. Walz, Leroy Chiao, and Donald A. Thomas; and Payload Specialist Chiaki

STS-64 Mission: LITE, SPARTAN-201 Space Shuttle: Discovery Launched: September 9, 1994, at 6:22:55 p.m. EDT **Landed:** September 20, 1994, at 5:12:52 p.m. EDT Landing Site: Edwards Air Force Base, CA Mission Duration: 10 days, 22 hours, 49 minutes Crew: Commander Richard N. Richards; Pilot L. Blaine Hammond, Jr.; and Mission Specialists Jerry M. Linenger, Susan J. Helms, Carl J. Meade, and Mark C. Lee

Mission: Space Radar Laboratory (SRL-2) Space Shuttle: Endeavou Launched: September 30, 1994, at 7:16:00 a.m. EDT **Landed:** October 11, 1994, at 10:02:08 a.m. PDT Landing Site: Edwards Air Force Base, CA **Mission Duration:** 11 days, 5 hours, 46 minutes Crew: Commander Michael A. Baker; Pilot Terrence W. Wilcutt; Payload Commander Thomas D. Jones; and Mission Specialists Steven L. Smith, Daniel W. Bursch, and Peter J.K. Wisoff

Mission: ATLAS-3. CRISTA-SPAS Space Shuttle: Atlantis Launched: November 3, 1994, at 11:59:43 a.m. EST **Landed:** November 14, 1994, at 7:33:45 a.m. PST **Landing Site:** Edwards Air Force Base, CA Mission Duration: 10 days, 22 hours, 34 minutes Crew: Commander Donald R. McMonagle; Pilot Curtis L. Brown, Jr.; Payload Commander Ellen Ochoa; and Mission Specialists Scott E. Parazynski, Joseph R. Tanner, and Jean-Francois Clervoy

STS-63 Mission: SPACEHAB-3 Space Shuttle: Discovery Launched: February 3, 1995, at 12:22:04 a.m. EST **Landed:** February 11, 1995, at 6:50:19 a.m. EST Landing Site: Kennedy Space Center, FL Mission Duration: 8 days, 6 hours, 28 minutes **Crew:** Commander James D. Wetherbee: Pilot Eileen M. Collins; and Mission Specialists C. Michael Foale, Janice E. Voss, Bernard A. Harris, Jr., and Vladimar G. Titov

STS-67 Mission: ASTRO-2 Space Shuttle: Endeavour **Launched:** March 2, 1995, at 1:38:13 a.m. EST **Landed:** March 18, 1995, at 1:47:01 p.m. PST Landing Site: Fdwards Air Force Base, CA Mission Duration: 16 days, 15 hours, 8 minutes **Crew:** Commander Stephen S. Oswald, Pilot William G. Gregory, Payload Commander Tamara E. Jernigan, Mission Specialists John M. Grunsfeld and Wendy B. Lawrence, and Payload Specialists Ronald A. Parise and Samuel T. Durrance

Mission: First Shuttle-Mir Docking Space Shuttle: Atlantis **Launched:** June 27, 1995, at 3:32:19.044 p.m. EDT **Landed:** July 7, 1995, at 10:54:34 a.m. EDT Landing Site: Kennedy Space Center, FL Mission Duration: 9 days, 19 hours, 22 minutes **Crew:** Commander Robert L. Gibson; Pilot Charles J. Precourt; Mission Specialists Ellen S. Baker, Bonnie J. Dunbar, and Gregory J. Harbaugh; Mir 19 Crew (upload) Anatoly Solovyev and Nikolai Budarin; and Mir 18 Crew (download) Norman E. Thagard, Vladimir Dezhurov, and Gannady Strekalov

Mission: TDRS-G **Space Shuttle:** Discovery **Launched:** July 13, 1995, at 9:41:55 a.m. EDT **Landed:** July 22, 1995, at 8:02 a.m. EDT **Landing Site:** Kennedy Space Center, FL Mission Duration: 8 days, 22 hours, 20 minutes Crew: Commander Terence T. Henricks; Pilot Kevin R. Kregel; and Mission Specialists Nancy Jane Currie, Donald A. Thomas, and Mary Ellen Weber

STS-69 Mission: SPARTAN 201-03, WSF-2 Space Shuttle: Endeavour **Launched:** September 7, 1995, at 11:09:00 a.m. EDT **Landed:** September 18, 1995, at 7:37:56 a.m. EDT Landing Site: Kennedy Space Center, FL Mission Duration: 10 days, 20 hours, 28 minutes **Crew:** Commander David M. Walker, Pilot Kenneth D. Cockrell, Payload Commander James S. Voss, and Mission Specialists James H. Newman and Michael L. Gernhardt

STS-73 Mission: USML-2 Space Shuttle: Columbia Launched: October 20, 1995, at 9:53:00 a.m. EDT **Landed:** November 5, 1995, at 6:45:21 a.m. EST Landing Site: Kennedy Space Center, FL Mission Duration: 15 days, 21 hours, 52 minutes **Crew:** Commander Kenneth D. Bowersox, Pilot Kent V. Rominger, Payload Commander Kathryn C. Thornton. Mission Specialists Catherine G. Coleman and Michael E. Lopez-Alegria, and Payload Specialists Fred W. Leslie and Albert Sacco, Jr.

Mission: Second Shuttle-Mir Docking Space Shuttle: Atlantis Launched: November 12, 1995, at 7:30:43 a.m. EST **Landed:** November 20, 1995, at 12:01:27 p.m. EST Landing Site: Kennedy Space Center, FL **Mission Duration:** 8 days, 4 hours, 30 minutes **Crew:** Commander Kenneth D. Cameron: Pilot James D. Halsell, Jr.; and Mission Specialists Jerry L. Ross, William S. McArthur, Jr., and Chris A. Hadfield

STS-72 Mission: SFU, OAST-Flyer Space Shuttle: Endeavour **Launched:** January 11, 1996, at 4:41:00 a.m. EST **Landed:** January 20, 1996, at 2:41:41 a.m. EST Landing Site: Kennedy Space Center, FL Mission Duration: 8 days, 22 hours, 1 minute **Crew:** Commander Brian Duffy; Pilot Brent W. Jett; and Mission Specialists Leroy Chiao, Daniel T. Barry, Winston E. Scott, and Koichi Wakata

Mission: TSS-1R, USMP-3 Space Shuttle: Columbia **Launched:** February 22, 1996, at 3:18:00 p.m. EST **Landed:** March 9, 1996, at 8:58:21 a.m. EST Landing Site: Kennedy Space Center, FL Mission Duration: 15 days, 17 hours, 41 minutes Crew: Commander Andrew M. Allen; Pilot Scott J. Horowitz; Payload Commander Franklin R. Chang Diaz; and Mission Specialists Maurizio Cheli, Jeffrey A. Hoffman, Claude Nicollier, and Umberto Guidoni

Mission: Third Shuttle-Mir Docking, SPACEHAB Space Shuttle: Atlantis Launched: March 22, 1996, at 3:13:04 a.m. EST Landed: March 31, 1996, at 5:28:57 a.m. PST Landing Site: Edwards Air Force Base, CA **Mission Duration:** 9 days, 5 hours, 15 minutes Crew: Commander Kevin P. Chilton; Pilot Richard A. Searfoss; and Mission Specialists Shannon W. Lucid, Linda M. Godwin, Michael R. Clifford, and Ronald M. Sega

Mission: SPACEHAB, SPARTAN (IAE) Space Shuttle: Endeavour Launched: May 19, 1996, at 6:30:00 a.m. EDT **Landed:** May 29, 1996, at 7:09:18 a.m. EDT Landing Site: Kennedy Space Center, FL Mission Duration: 10 days, 0 hours, 39 minutes Crew: Commander John H. Casper; Pilot Curtis L. Brown, Jr.; and Mission Specialists Daniel W. Bursch, Mario Runco, Jr., Marc Garneau, and Andrew S.W. Thomas

STS-78 Mission: LMS Space Shuttle: Columbia **Launched:** June 20, 1996, at 10:49:00 a.m. EDT **Landed:** July 7, 1996, at 8:36:45 a.m. EDT Landing Site: Kennedy Space Center, FL Mission Duration: 16 days, 21 hours, 47 minutes **Crew:** Commander Terence T. Henricks, Pilot Kevin R. Kregel, Flight Engineer Susan J. Helms, Mission Specialists Richard M. Linnehan and Charles E. Brady Jr., and Payload Specialists Jean-Jacques Favier and Robert Brent Thirsk

STS-79 **Mission:** Fourth Shuttle-Mir Docking Space Shuttle: Atlantis Launched: September 16, 1996, at 4:54:49 a.m. EDT **Landed:** September 26, 1996, at 8:13:15 a.m. EDT Landing Site: Kennedy Space Center, FL Mission Duration: 10 days, 3 hours, 18 minutes Crew: Commander William F. Readdy; Pilot Terrence W. Wilcutt; and Mission Specialists Thomas D. Akers, John E. Blaha, Jay Apt, and Carl E. Walz

STS-80 Mission: ORFEUS-SPAS II, WSF-3 Space Shuttle: Columbia **Launched:** November 19, 1996, at 2:55:47 p.m. EST Landed: December 7, 1996, at 6:49:05 a.m. EST Landing Site: Kennedy Space Center, FL Mission Duration: 17 days, 15 hours, 53 minutes Crew: Commander Kenneth D. Cockrell; Pilot Kent V. Rominger; and Mission Specialists Tamara E. Jernigan, Thomas D. Jones, and F. Story Musgrave

Mission: Fifth Shuttle-Mir Docking Space Shuttle: Atlantis **Launched:** January 12, 1997, at 4:27:23 a.m. EST **Landed:** January 22, 1997, at 9:22:44 a.m. EST Landing Site: Kennedy Space Center, FL **Crew:** Commander Michael A. Baker; Pilot Brent W. Jett, Jr.; and Mission Specialists John M. Grunsfeld, Marsha S. Ivins, Peter J. Wisoff, and Jerry M. Linenger

STS-82 Mission: Second HST Servicing Space Shuttle: Discovery Launched: February 11, 1997, at 3:55:17 a.m. EST **Landed:** February 21, 1997, at 3:32 a.m. EST Landing Site: Kennedy Space Center, FL Mission Duration: 9 days, 23 hours, 37 minutes **Crew:** Commander Kenneth D. Bowersox; Pilot Scott J. Horowitz; and Mission Specialists Mark C. Lee, Steven A. Hawley, Gregory J. Harbaugh, Steven L. Smith, and Joseph R. Tanner

Mission: MSL-1 Space Shuttle: Columbia **Launched:** April 4, 1997, at 2:20:32 p.m. EST **Landed:** April 8, 1997, at 2:33:11 p.m. EDT Landing Site: Kennedy Space Center, FL Mission Duration: 3 days, 23 hours, 13 minutes Crew: Commander James D. Halsell, Pilot Susan L. Still, Payload Commander Janice E. Voss, Mission Specialists Donald A. Thomas and Michael L. Gernhardt, and Payload Specialists Roger Crouch and Greg Linteris

STS-84 Mission: Sixth Shuttle-Mir Docking Space Shuttle: Atlantis **Launched:** May 15, 1997, at 4:07:48 a.m. EDT **Landed:** May 24, 1997, at 9:27:44 a.m. EDT Landing Site: Kennedy Space Center, FL Mission Duration: 9 days, 23 hours, 19 minutes Crew: Commander Charles J. Precourt; Pilot Eileen M. Collins; and Mission Specialists C. Michael Foale, Carlos I. Noriega, Edward T. Lu, Jean-Francois Clervoy, and Elena V. Kondakova

Mission: MSL-1 Reflight Space Shuttle: Columbia **Launched:** July 1, 1997, at 2:02:00 p.m. EDT **Landed:** July 17, 1997, at 6:46:34 a.m. EDT Landing Site: Kennedy Space Center, FL **Mission Duration:** 15 days, 16 hours, 44 minutes Crew: Commander James D. Halsell, Pilot Susan L. Still, Payload Commander Janice E. Voss, Mission Specialists Donald A. Thomas and Michael L. Gernhardt, and Payload Specialists Roger Crouch and Greg Linteris

Mission: CRISTA-SPAS-02 Space Shuttle: Discovery **Launched:** August 7, 1997, at 10:41:00 a.m. EDT **Landed:** August 19, 1997, at 7:07:59 a.m. EDT Landing Site: Kennedy Space Center, FL Mission Duration: 11 days, 19 hours, 18 minutes Crew: Commander Curtis L. Brown; Pilot Kent V. Rominger; Mission Specialists N. Jan Davis, Robert L Curbeam, Jr., and Stephen K. Robinson; and Payload Specialist Bjarni V. Tryggvason

Mission: Seventh Shuttle-Mir Docking Space Shuttle: Atlantis **Launched:** September 25, 1997, at 10:34:19 p.m. EDT **Landed:** October 6, 1997, at 5:55:09 p.m. EDT Landing Site: Kennedy Space Center, FL Mission Duration: 10 days, 19 hours, 20 minutes Crew: Commander James D. Wetherbee; Pilot Michael J. Bloomfield; and Mission Specialists Vladimar G. Titov, Scott E. Parazynski, Jean-Loup J.M. Chretien, Wendy B. Lawrence, and David A. Wolf

Mission: USMP-4, Spartan 201-04 Space Shuttle: Columbia **Launched:** November 19, 1997, at 2:46:00 p.m. EST Landed: December 5, 1997, at 7:20:04 a.m. EST Space Shuttle: Endeavour Landing Site: Kennedy Space Center, FL **Mission Duration:** 15 days, 16 hours, 34 minutes **Crew:** Commander Kevin R. Kregel; Pilot Steven W. Lindsey; and Mission Specialists Winston E. Scott, Kalpana Chawla, Takao Doi, and Leonid K. Kadenyuk and Carlos Noriega

Mission: Eighth Shuttle-Mir Docking Space Shuttle: Endeavour **Launched:** January 22, 1998, at 9:48:15 p.m. EST **Landed:** January 31, 1998, at 5:35:09 p.m. EST Flight 5A Landing Site: Kennedy Space Center, FL Mission Duration: 8 days, 19 hours, 46 minutes Crew: Commander Terrence W. Wilcutt; Pilot Joe F. Edwards, Jr.; Payload Commander Bonnie J. Dunbar; and Mission Specialists Michael P. Anderson, James F. Reilly, Salizhan Shakirovich Sharipov, and Andrew S.W. Thomas

Mission: Final Spacelab Mission Space Shuttle: Columbia Launched: April 17, 1998, at 2:19:00 p.m. EDT Flight 5A.1 **Landed:** May 3, 1998, at 12:08:59 p.m. EDT **Space Shuttle:** Discovery Landing Site: Kennedy Space Center, FL Mission Duration: 15 days, 21 hours, 50 minutes Crew: Commander Richard A. Searfoss; Pilot Scott D. Landing Site: Kennedy Space Center, FL Altman; Mission Specialists Richard M. Linnehan, Dafydd Rhys Williams, and Kathryn P. Hire; and Payload Specialists Dr. Jay C. Buckey, Jr., and Dr. James A. Pawelczyk and Paul Richards

Mission: Ninth and Final Shuttle-Mir Docking Space Shuttle: Discovery Fliaht 6A Launched: June 2, 1998, at 6:06:24 p.m. EDT Space Shuttle: Endeavour **Landed:** June 12 1998, at 2:00:18 p.m. EDT Landing Site: Kennedy Space Center, FL **Landed:** May 1, 2001, at 12:10:42 p.m. EDT Mission Duration: 9 days, 19 hours, 54 minutes Landing Site: Edwards Air Force Base, CA Crew: Commander Charles J. Precourt; Pilot Dominic L. Pudwill Gorie: and Mission Specialists Wendy B. Lawrence, Franklin R. Chang-Diaz, Janet L. Kavandi, and Valery Victorovitch Ryumin Parazynski, John Phillips, Umberto Guidoni, and

Yuri Lonchakov

Mission: John Glenn's Flight, SPACEHAB STS-104 Space Shuttle: Discovery **Launched:** October 29, 1998, at 2:19:34 p.m. EST Fliaht 7A **Landed:** November 7, 1998, at 12:04:00 p.m. EST Space Shuttle: Atlantis Landing Site: Kennedy Space Center, FL Mission Duration: 9 days, 19 hours, 54 minutes Crew: Commander Curtis L. Brown; Pilot Steven W. Lindsey; Mission Specialists Scott E. Parazynski, Stephen K. Robinson, and Pedro Duque; and Payload Specialists Chiaki Mukai and John H. Glenn

Mission: First International Space Station Flight STS-105 Space Shuttle: Endeavour Launched: December 4, 1998, at 3:35:34 a.m. EST Flight 7A.1 Landed: December 15, 1998, at 10:53:29 p.m. EST **Space Shuttle:** Discovery Landing Site: Kennedy Space Center, FL Mission Duration: 11 days, 19 hours, 18 minutes Crew: Commander Robert D. Cabana; Pilot Frederick W. Landing Site: Kennedy Space Center, FL Sturckow; and Mission Specialists Nancy J. Currie, Jerry L. Ross, James H. Newman, and Sergei K. Krikalev

Patrick Forrester Mission: Second International Space Station Flight Space Shuttle: Discovery STS-108 **Launched:** May 27, 1999, at 6:49:42 a.m. EDT **Landed:** June 6, 1999, at 2:02:43 a.m. EDT Fliaht UF-1 Landing Site: Kennedy Space Center, FL Space Shuttle: Endeavour Mission Duration: 9 days, 19 hours, 13 minutes **Crew:** Commander Kent V. Rominger; Pilot Rick D. Husband; and Mission Specialists Ellen Ochoa, Tamara Landing Site: Kennedy Space Center, FL E. Jernigan, Daniel T. Barry, Julie Payette, and Valery Ivanovich Tokarev

Mission: Chandra X-ray Observatory Onufrienko, Mikhail Tyurin, and Vladimir N. Dezhurov Space Shuttle: Columbia **Launched:** July 23, 1999, at 12:31:00 a.m. EDT **Landed:** July 27, 1999, at 11:20:37 p.m. EDT Landing Site: Kennedy Space Center, FL **Space Shuttle:** Columbia Mission Duration: 4 days, 22 hours, 49 minutes Crew: Commander Eileen M. Collins; Pilot Jeffrey S. Ashby; and Mission Specialists Steven A. Hawley, Catherine G. Coleman, and Michel Tognini **Mission:** Third Hubble Space Telescope

Servicing Mission Space Shuttle: Discovery **Launched:** December 19, 1999, at 7:50:00 p.m. EST Landed: December 27, 1999, at 7:01:34 p.m. EST Landing Site: Kennedy Space Center, FL Space Shuttle: Atlantis Mission Duration: 7 days, 23 hours, 10 minutes Crew: Commander Curtis L. Brown; Pilot Scott J. Kelly; and Mission Specialists Steven L. Smith, C. Michael Foale, John M. Grunsfeld, Claude Nicollier, and Jean-Francois Clervoy

Mission: Shuttle Radar Topography Mission Space Shuttle: Endeavour **Launched:** February 11, 2000, at 12:43:40 p.m. EST **Landed:** February 22, 2000, at 6:22:23 p.m. EDT Landing Site: Kennedy Space Center, FL Mission Duration: 11 days, 5 hours, 38 minutes Crew: Commander Kevin R. Kregel; Pilot Dominic L. Pudwill Gorie; and Mission Specialists Janet L. Kavandi, Janice E. Voss, Mamoru Mohri, and Gerhard P.J. Thiele

STS-103

STS-101 Mission: Third International Space Station Flight Space Shuttle: Atlantis **Launched:** May 19, 2000, at 6:11:10 a.m. EDT Landed: May 29, 2000, at 2:20:19 a.m. EDT Landing Site: Kennedy Space Center, FL Mission Duration: 9 days, 20 hours, 9 minutes Crew: Commander James D. Halsell, Jr.; Pilot Scott J. "Doc" Horowitz; and Mission Specialists Mary Ellen Weber, Jeffrey N. Williams, James S. Voss, Susan J. Helms, and Yury Vladimirovich Usachev

Mission: International Space Station Flight 2A.2b Space Shuttle: Atlantis **Launched:** September 8, 2000, at 8:45:47 a.m. EDT **Landed:** September 20, 2000, at 3:58:01 a.m. EDT Landing Site: Kennedy Space Center, FL Mission Duration: 11 days, 19 hours, 12 minutes **Crew:** Commander Terrence W. Wilcutt; Pilot Scott D. Altman; and Mission Specialists Daniel C. Burbank Edward T. Lu, Richard A. Mastracchio, Yuri I. Malenchenko, and Boris V. Morokov

Mission: International Space Station Assembly Flight 3.3A Space Shuttle: Discovery Launched: October 11, 2000, at 7:17 p.m. EDT Landed: October 24, 2000, at 5 p.m. EDT Landing Site: Edwards Air Force Base, CA **Mission Duration:** 12 days, 21 hours, 40 minutes **Crew:** Commander Brian Duffy; Pilot Pamela A. Melrov: and Mission Specialists Koichi Wakata, Lerov Chiao, Peter J.K. Wisoff, Michael Lopez-Alegria, and William S. McArthur

Mission: International Space Station Assembly **Launched:** November 30, 2000, at 10:06:01 p.m. EST **Landed:** December 11, 2000, at 6:04:20 p.m. EST Landing Site: Kennedy Space Center, FL Mission Duration: 10 days, 19 hours, 58 minutes Crew: Commander Brent Jett: Pilot Michael Bloomfield: and Mission Specialists Joseph Tanner, Marc Garneau,

Mission: International Space Station Assembly Space Shuttle: Atlantis **Launched:** February 7, 2001, at 6:13:02 p.m. EST **Landed:** February 20, 2001, at 3:33 p.m. EST **Landing Site:** Edwards Air Force Base, CA Mission Duration: 12 days, 20 hours, 20 minutes Crew: Commander Kenneth Cockrell; Pilot Mark Polansky; and Mission Specialists Robert Curbeam, Thomas Jones, and Marsha Ivins

Mission: International Space Station Assembly **Launched:** March 8, 2001, at 6:42:09 a.m. EST Landed: March 21, 2001, at 2:31 a.m. EST Mission Duration: 12 days, 19 hours, 49 minutes **Crew:** Commander James Wetherbee, Pilot James Kelly, and Mission Specialists Andrew S.W. Thomas

Mission: International Space Station Assembly **Launched:** April 19, 2001, at 2:40:42 p.m. EDT **Mission Duration:** 11 days, 12 hours, 54 minutes **Crew:** Commander Kent Rominger; Pilot Jeffrey Ashby; and Mission Specialists Chris Hadfield, Scott

Launched: July 12, 2001, at 5:03:59 a.m. EDT **Landed:** July 24, 2001, at 11:39 p.m. EDT Landing Site: Kennedy Space Center, FL **Mission Duration:** 12 days, 18 hours, 36 minutes **Crew:** Commander Steven Lindsey; Pilot Charles Hobaugh: and Mission Specialists Michael Gernhardt.

James Reilly, and Janet Kavandi Mission: International Space Station Assembly **Launched:** August 10, 2001, at 5:10:14 p.m. EDT **Landed:** August 22, 2001, at 2:23 p.m. EDT **Mission Duration:** 11 days, 19 hours, 38 minutes Crew: Commander Scott Horowitz, Pilot Rick Sturckow, and Mission Specialists Daniel Barry and

Mission: International Space Station Assembly Launched: December 5, 2001, at 5:19:28 p.m. EST **Landed:** December 17, 2001, at 12:55 p.m. EST Mission Duration: 11 days, 19 hours, 55 minutes **Crew:** Commander Dominic L. Gorie; Pilot Mark E. Kelly; Mission Specialists Linda M. Godwin and Daniel M. Tani; and three Russian cosmonauts: Yuri

Mission: Hubble Space Telescope Servicing Mission **Launched:** March 1, 2002, at 6:22 a.m. EST **Landed:** March 12, 2002, at 4:33:05 a.m. EST Landing Site: Kennedy Space Center, FL Mission Duration: 10 days, 22 hours, 11 minutes **Crew:** Commander Scott D. Altman; Pilot Duane G. Carey; Payload Commander John M. Grunsfeld; and Mission Specialists Nancy J. Currie, James H. Newman, Richard M. Linnehan, and Michael J. Massimino

Mission: International Space Station 8A Launched: April 8, 2002, at 4:44:19 p.m. EDT **Landed:** April 19, 2002, at 12:28:08 p.m. EDT **Landing Site:** Kennedy Space Center, FL Mission Duration: 10 days, 19 hours, 42 minutes, **Crew:** Commander Michael J. Bloomfield; Pilot Stephen N. Frick: and Mission Specialists Jerry L. Ross, Steven L. Smith, Ellen Ochoa, Lee M.E. Morin, and Rex J. Walheim

Mission: International Space Station UF2 Space Shuttle: Endeavour **Launched:** June 5, 2002, at 5:22:49 p.m. EDT **Landed:** June 19, 2002, at 1:58:45 p.m. EDT Landing Site: Edwards Air Force Base CA **Mission Duration:** 13 days, 20 hours, 35 minutes **Crew:** Commander Kenneth Cockrell. Pilot Paul Lockhart, and Mission Specialists Franklin Chang-Diaz and Philippe Perrin

STS-112 Mission: International Space Station 9A Space Shuttle: Atlantis Launched: October 7, 2002, at 3:45:51 p.m. EDT **Landed:** October 18, 2002, at 11:44:35 a.m. EDT Landing Site: Kennedy Space Center, FL Mission Duration: 10 days, 19 hours, 58 minutes **Crew:** Commander Jeffrey Ashby; Pilot Pamela Melroy; and Mission Specialists David Wolf, Piers Sellers, Sandra Magnus, and Fyodor Yurchikhin

Mission: International Space Station 11A Space Shuttle: Endeavour **Launched:** November 23, 2002, at 7:49:47 p.m. EST **Landed:** December 7, 2002, at 2:37:12 p.m. EST Landing Site: Kennedy Space Center, FL Mission Duration: 13 days, 18 hours, 48 minutes **Crew:** Commander Jim Wetherbee, Pilot Paul Lockhart, and Mission Specialists Michael Lopez Alegria and John Herrington

STS-107 Mission: Migrogravity Research Mission, SPACEHAB Space Shuttle: Columbia **Launched:** January 16, 2003, at 10:39 a.m. EST Mission Duration: 15 days, 22 hours, 20 minutes Columbia and crew were lost during reentry 16 minutes before landing on February 1, 2003. **Crew:** Commander Rick Husband; Pilot Willie McCool; Payload Commander Michael Anderson; Mission Specialists Kalpana Chawla, David Brown, and Laurel Clark; and Payload Specialist Ilan Ramon

Mission: International Space Station Assembly Flight LF1 Space Shuttle: Discovery STS-125 **Launched:** July 26, 2005, at 10:39:00 a.m. EDT **Landed:** August 9, 2005, at 5:11:22 a.m. PDT Landing Site: Edwards Air Force Base, CA Mission Duration: 13 days, 21 hours, 32 minutes Crew: Commander Eileen Collins: Pilot James Kelly: and Mission Specialists Charles Camarda, Wendy Lawrence, Soichi Noguchi, Stephen Robinson, and Andrew Thomas

STS-121 **Mission:** International Space Station Assembly Fliaht ULF1.1 Space Shuttle: Discovery **Launched:** July 4, 2006, at 2:37:55 p.m. EDT Landed: July 17, 2006, at 9:15:49 a.m. EDT Landing Site: Kennedy Space Center, FL **Mission Duration:** 12 days, 18 hours, 37 minutes Crew: Commander Steven W. Lindsev: Pilot Mark E Kelly; and Mission Specialists Stephanie D. Wilson, Michael E. Fossum, Piers J. Sellers, Thomas Reiter, and Lisa M. Nowak

STS-115 **Mission:** International Space Station Assembly Flight 12A **Space Shuttle:** Atlantis Launched: September 9, 2006, at 11:15 a.m. EDT **Landed:** September 21, 2006, at 6:21 a.m. EDT Landing Site: Kennedy Space Center, FL Mission Duration: 11 days, 19 hours, 6 minutes Crew: Commander Brent W. Jett, Jr.; Pilot Christopher J. Ferguson; and Mission Specialists Heidemarie M. Stefanyshyn-Piper, Joseph R. "Joe" Tanner, Daniel C. Burbank, and Steven G. MacLean

Mission: International Space Station Assembly Flight 12A.1 Shuttle: Discovery Launched: December 9, 2006, at 8:47 p.m. EDT Landed: December 22, 2006, at 5:32 p.m. EDT Landing Site: Kennedy Space Center, FL Mission Duration: 12 days, 20 hours, 45 minutes **Crew:** Commander Mark Polansky; Pilot Bill Oefelein; Expedition 14 Flight Engineer Sunita Williams; and Mission Specialists Joan Higginbotham, Nicholas Patrick, Thomas Reiter, Christer Fuglesang, and Robert Curbeam

Mission: International Space Station Assembly Shuttle: Atlantis Launched: June 8, 2007, at 7:38:04 p.m. EDT **Landed:** June 22, 2007, at 3:49 p.m. EDT Landing Site: Edwards Air Force Base, CA Mission Duration: 13 days, 20 hours, 12 minutes **Crew:** Commander Rick Sturckow; Pilot Lee Archambault: and Mission Specialists Patrick Forrester, John "Danny" Olivas, Clayton Anderson,

Jim Reilly, and Steven Swanson STS-118 **Mission:** International Space Station Assembly Flight 13A.1 Flight 19A Shuttle: Endeavour Launched: August 8, 2007, at 6:36 p.m. EDT **Landed:** August 21, 2007, at 12:33 p.m. EDT Landing Site: Kennedy Space Center, FL Mission Duration: 12 days, 17 hours, 55 minutes **Crew:** Commander Scott Kelly: Pilot Charlie Hobaugh:

and Mission Specialists Dave Williams, Barbara R. Morgan, Rick Mastracchio, Tracy Caldwell, and Alvin Drew **Mission:** International Space Station Assembly Flight 10A Shuttle: Discovery **Launched:** October 23, 2007, at 11:38 a.m. EDT **Landed:** November 7, 2007, at 1:01 p.m. EST Landing Site: Kennedy Space Center, FL **Mission Duration:** 15 days, 2 hours, 24 minutes **Crew:** Commander Pam Melroy; Pilot George Zamka;

Wheelock, Stephanie Wilson, and Paolo Nespoli Mission: International Space Station Assembly Flight 1E Shuttle: Atlantis Launched: February 7, 2008, at 2:45 p.m. EST **Landed:** February 20, 2008, at 9:07 a.m. EST Landing Site: Kennedy Space Center, FL **Mission Duration:** 12 days, 18 hours, 21 minutes **Crew:** Commander Steve Frick; Pilot Alan Poindexter; and Mission Specialists Rex Walheim, Stanley Love, Leland Melvin, Hans Schlegel, and Léopold Eyharts

and Mission Specialists Scott Parazynski, Doug

STS-123 **Mission:** International Space Station Assembly Fliaht 1J/A Space Shuttle: Endeavour Launched: March 11, 2008, at 2:28 a.m. EDT **Landed:** March 26, 2008, at 8:39 p.m. EDT Landing Site: Kennedy Space Center, FL Mission Duration: 15 days, 18 hours **Crew:** Commander Dominic Gorie: Pilot Gregory H. Johnson; and Mission Specialists Garrett Reisman, Robert L. Behnken, Mike Foreman, Takao Doi, and Rick Linnehan

STS-124 **Mission:** International Space Station Assembly Flight 1J Space Shuttle: Discovery **Launched:** May 31, 2008, at 5:02 p.m. EDT **Landed:** June 14, 2008, at 11:15 a.m. EDT Landing Site: Kennedy Space Center, FL Mission Duration: 13 days, 18 hours, 13 minutes Crew: Commander Mark Kelly: Pilot Ken Ham: and Mission Specialists Karen Nyberg, Garrett Reisman, Greg Chamitoff, Akihiko Hoshide, Ron Garan, and Mike Fossum

Mission: International Space Station Assembly **Space Shuttle:** Endeavour Launched: November 14, 2008, at 7:55 p.m. EST **Landed:** November 30, 2008, at 4:25 p.m. EST Landing Site: Edwards Air Force Base, CA Mission Duration: 15 days, 20 hours, 29 minutes Crew: Commander Christopher J. Ferguson; Pilot Eric A. Boe; and Mission Specialists Sandra H. Magnus, Stephen G. Bowen, Donald R. Pettit, Robert S. "Shane Kimbrough, and Heidemarie M. Stefanyshyn-Piper

Mission: International Space Station Assembly Flight 15A Space Shuttle: Discovery **Launched:** March 15, 2009, at 7:43 p.m. ED7 **Landed:** March 28, 2009, at 3:14 p.m. EDT Landing Site: Kennedy Space Center, FL Mission Duration: 12 days, 19 hours, 29 minutes Crew: Commander Lee Archambault: Pilot Tony Antonelli; and Mission Specialists Joseph Acaba, Steve Swanson, Richard Arnold, John Phillips, and Koichi Wakata

Mission: Hubble Space Telescope Servicing Mission 4 **Space Shuttle:** Atlantis Launched: May 11, 2009, at 2:01 p.m. EDT **Landed:** May 24, 2009, at 11:39 a.m. EDT Landing Site: Edwards Air Force Base, CA Mission Duration: 12 days, 21 hours, 37 minutes **Crew:** Commander Scott D. Altman; Pilot Gregory Johnson: and Mission Specialists Michael J. Massimino, Michael T. Good, K. Megan McArthur, John M. Grunsfeld, and Andrew J. Feustel

STS-127 Mission: International Space Station Assembly Flight 2J/A Space Shuttle: Endeavour Launched: July 15, 2009, at 6:03 p.m. EDT **Landed:** July 31, 2009, at 10:48 a.m. EDT Landing Site: Kennedy Space Center, FL Mission Duration: 15 days, 16 hours, 45 minutes Crew: Commander Mark Polansky; Pilot Doug Hurley; and Mission Specialists Dave Wolf, Christopher Cassidy, Julie Payette, Tom Marshburn, and Tim Kopra

Mission: International Space Station Assembly Space Shuttle: Discovery Launched: August 28, 2009, at 11:59 p.m. EDT Landed: September 11, 2009, at 8:53 p.m. EDT **Landing Site:** Edwards Air Force Base, CA Mission Duration: 13 days, 20 hours, 54 minutes Crew: Commander Rick Sturckow; Pilot Kevin Ford and Mission Specialists José Hernández, John "Danny" Olivas, Nicole Stott, Christer Fuglesang, and Patrick Forrester

STS-129 **Mission:** International Space Station Assembly Flight ULF3 **Space Shuttle:** Atlantis Launched: November 16, 2009, at 2:28 p.m. EST **Landed:** November 27, 2009, at 9:44 a.m. EST Landing Site: Kennedy Space Center, FL Mission Duration: 10 days, 19 hours, 16 minutes **Crew:** Commander Charles Hobaugh: Pilot Barry Wilmore; and Mission Specialists Mike Foreman, Leland Melvin, Robert Satcher, Jr., Nicole Stott, and Randy Bresnik

STS-130 Mission: International Space Station Assembly Flight 20A Shuttle: Endeavour Launched: February 8, 2010, at 4:14 a.m. EST **Landed:** February 21, 2010, at 10:20 p.m. EST Landing Site: Kennedy Space Center, FL **Mission Duration:** 13 days, 18 hours, 6 minutes **Crew:** Commander George Zamka; Pilot Terry Virts; and Mission Specialists Nicholas Patrick, Stephen Robinson, Robert Behnken, and Kathryn Hire

Mission: International Space Station Assembly Shuttle: Discovery Launched: April 5, 2010, at 6:21 a.m. EDT **Landed:** April 20, 2010, at 9:08 a.m. EDT Landing Site: Kennedy Space Center, FL Mission Duration: 15 days, 2 hours, 47 minutes Crew: Commander Alan Poindexter: Pilot James F Dutton, Jr.; and Mission Specialists Rick Mastracchio Clayton Anderson, Dorothy Metcalf-Lindenburger,

Stephanie Wilson, and Naoko Yamazaki STS-132 **Mission:** International Space Station Assembly Flight ULF4 **Shuttle:** Atlantis Launched: May 14, 2010, at 2:20 p.m. EDT **Landed:** May 26, 2010, at 8:48 a.m. EDT Landing Site: Kennedy Space Center, FL Mission Duration: 11 days, 18 hours, 29 minutes Crew: Commander Ken Ham; Pilot Tony Antonelli; and Mission Specialists Garrett Reisman, Michael Good,

Piers Sellers, and Steve Bowen

STS-133 **Mission:** International Space Station Assembly Flight ULF5 Shuttle: Discovery Launched: February 24, 2011, at 4:53:24 p.m. EST **Landed:** March 9, 2011, at 11:57:17 a.m. EST Landing Site: Kennedy Space Center, FL Mission Duration: 12 days, 19 hours, 4 minutes Crew: Commander Steve Lindsey: Pilot Eric Boe: and Mission Specialists Alvin Drew, Nicole Stott, Steve Bowen, and Michael Barratt

Mission: International Space Station Assembly Shuttle: Endeavour Launched: May 16, 2011, at 8:56 a.m. EDT **Landed:** June 1, 2011, at 2:34 a.m. EDT Landing Site: Kennedy Space Center, FL Mission Duration: 15 days, 17 hours, 38 minutes **Crew:** Commander Mark Kelly; Pilot Gregory H. Johnson; and Mission Specialists Michael Fincke, Greg Chamitoff, Andrew Feustel, and Roberto Vittori

Mission: International Space Station Assembly Flight ULF7 Shuttle: Atlantis Launched: July 8, 2011, at 11:29 a.m. EDT **Landed:** July 21, 2011, at 5:57 a.m. EDT Landing Site: Kennedy Space Center, FL **Mission Duration:** 13 days **Crew:** Commander Chris Ferguson, Pilot Doug Hurley, and Mission Specialists Rex Walheim and Sandy Magnus

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